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ABSTRACT

Impromptu speech can be defined in different ways: in terms of situational context, linguistic characteristics, and real-time processing. These approaches are not contradictory. There are certain situations that call for rapid processing of spoken discourse, and the needs of that processing are reflected in the structure of the text. The degree of "impromptuness" depends on a number of parameters including degree of scripting, extent of planning-span, and boundness to traditional macrostructural text patterns. Texts emerging from impromptu-speech situations present special problems for the linguist, who must learn to manage a host of problems often dismissed as involving performance rather than competence. One way of approaching such problems is to focus on processes involved in communication and text comprehension, and not only on the structure of texts as such. (Author/MSE)

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INTRODUCTION

Impromptu Speech, Structure, and Process

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INTRODUCTION

Impromptu speech, structure, and process

Abstract: Impromptu speech can be defined in different ways: in terms of situational context, linguistic characteristics, and real-time processing. These approaches are not contradictory: there are certain situations that call for rapid processing of spoken discourse, and the needs of such processing are reflected in the structure of the text. The degree of 'impromptuness' depends on a number of parameters including degree of scripting, extent of planning-span, and boundness to traditional macrostructural text patterns.

Texts emerging from impromptu-speech situations present special problems for the linguist, who must learn to manage a host of problems often dismissed as involving 'performance' rather than 'competence'. One way of approaching such problems is to focus on the processes involved in communication and text comprehension, and not only on the structure of texts as such.

1

Having convened a symposium on the linguistic study of impromptu speech I suppose I ought to start by providing a gloss explaining what I mean by 'impromptu'. I have deliberately avoided speaking about 'unplanned', as opposed to 'planned', discourse for the simple reason that all discourse involves planning, even at several levels. Therefore 'unplanned discourse' sounds like a contradiction. To me the collocation 'spontaneous discourse' also carries undesirable overtones. For we know there is impromptu speech which does not arise spontaneously but may be elicited from a speaker, or even extorted from him against his will. The flavour of 'unrehearsed' which goes with 'impromptu' more aptly conveys the appropriate semantic nuance.

Another term I have wanted to skirt is 'conversation analysis', though many scholars use it in a sense akin to that of 'the study of impromptu speech'. All impromptu speech is not conversation. There are impromptu

monologues too. And like 'discourse analysis', 'conversation analysis' puts an undue emphasis on analysis as opposed to synthesis and generation. Linguists may of course just as well describe languages and texts through generative and synthetic approaches as through analyses in the proper sense of the term.

In the collocation 'impromptu speech', the word 'speech' also raises problems. Speech is no doubt the most common type of impromptu discourse. But impromptu dialogue may run through other channels such as telex. There are even situations where people converse in writing, with deaf friends for instance or perhaps during a meeting where the communication partners do not wish to disturb the proceedings. Such 'impromptu writing' plays a more restricted social role than impromptu speech, but it might all the same throw some light on some very general traits of 'impromptuness'.

If, then, we accept the term 'impromptu', and insist on the necessity of defining impromptu speech, we can proceed in at least three different ways.

First we can try defining it in terms of situational context, by listing those situational features that must be present if a discourse is to qualify as impromptu speech. Lists of such features have been attempted for instance by Jaakko Lehtonen, Bengt Orestrom and Cecilia Thavenius in the present volume. If contextual parameters are weighted along a scale we may also find that there are texts with different degrees of impromptuness. This contextual approach might ultimately lead to the view that impromptu speech cannot be defined in linguistic terms. There would then be no 'impromptu language'. There would only be situations in which language is used impromptu.

The second, and opposite, approach would be to define impromptu speech in terms of its intratextual features, in theory both on a macro-level involving textual macrostructures and on a micro-level involving syntax. According to this principle, the exponents of impromptuness reside in the text itself and can be described in terms of syntax (including 'deviance'), the use of certain types of phrases or particles ('pragmatic particles') and fillers, the prevalence of certain types of reference, and the like. Several of the papers in this volume examine linguistic features thought to be characteristic of impromptu texts.

The third avenue is provided by language processing and thus presupposes a process-oriented linguistics. Impromptu speech differs from other genres because it is governed by the needs of real-time processing, or perhaps rather by the type of rapid processing (whether technically real-time or batch) that

human beings can manage in those situational contexts that call for impromptu speech. Memory limitations and other constraints on discourse processing then become crucial in shaping impromptu texts, and they affect the texts both through the speaker's own limitations and through what the speaker, consciously or not, thinks of the hearer's message-processing capacities in each situation. In this volume, such processual views seem to underlie at least the papers by Danica Seleskovitch and Karla Déjean le Féal. Both emphasize the crucial role of cognitive competence and referential meaning in the processing of impromptu speech.

These three approaches are not contradictory. On the contrary they supplement one another. We might synthesize them into one total view by saying that there are certain types of situations which call for rapid processing of spoken discourse, whether literally in real time or in small batches, and that the needs of such processing are then reflected in the macrostructure and microstructure of the resulting texts. Such texts will be called 'impromptu'.

2

There are quite a few observations one can make about the contextual and situational characteristics of impromptu speech. One set of such observations has to do with speech in relation to writing. It has sometimes been forgotten that texts actually refuse to fall neatly into two discrete categories, spoken and written. Especially in technically advanced societies the two channels may interact in intricate ways, particularly if verbal texts (spoken, written, or both) are further supported by pictorial matter as in illustrated texts or films or tv programmes. But even apart from such technically sophisticated messages, there are common situations in which speakers combine channels. Scripted speech, that is, text read aloud from a script, is an example of a text type in which writing and speech interact. There can actually be many different types of scripted speech, depending on whether the script is complete and will be read word by word, or only gives notes which must be elaborated and completed when they are transmuted into speech. A common text type is the conference paper whose metamorphoses run from script through speech back to script: the author has written his paper to be read at a meeting, but is also (and perhaps primarily) thinking of its ultimate publi-

cation in the conference volume or in a journal. In all such instances the degrees of impromptuness correlate inversely with degrees of scripting. There runs a scale from completely unscripted speech to fully scripted speech. We must decide what part of this scale we accept as 'impromptu'.

But as I already noted, 'unscripted' does not necessarily mean 'unprepared' or 'unplanned'. There are situations in which unscripted texts have been meticulously worked out in advance, for instance when politicians state their views at an election meeting or on a tv programme. In such situations speakers may even find it expedient to camouflage thoroughly prepared texts as impromptu by adding to them fake impromptu signals such as pretended hesitation pauses or wilful syntactic deviance and repair.

In discussions of prepared texts, 'planning-spans' become relevant. A text, or part of one, has a long planning-span if it can be planned in advance and produced according to plan and without interference. Lectures for instance can often be planned, and so can those dialogues in which the planner remains in control (as cross-examiner, interviewer, etc.). Socially inferior or respondent members of unscripted dialogue on the contrary cannot control the dialogue enough for proper planning. They must adjust to whatever comes.

Thus in addition to the dimension scripted/unscripted we ought to reckon with the dimension planned/unplanned when defining what we mean by 'impromptu'. These two dimensions coincide often, but by no means always.

Another sense in which texts may have different degrees of impromptuness is their boundness to pre-existing textual patterns. There are many text types which might be termed 'slot-and-filler texts' or 'template texts' (in Swedish I have spoken about *schablontexter*) because all the speaker/writer is supposed to do is to fill in gaps in a pre-set textual pattern. When we register at a hotel or fill income-tax returns we merely write in specific pieces of information into specific empty slots. On a cline of textual boundness such texts (which play an important role in modern literate societies) qualify as maximally bound. Less bound are texts of the type of weather reports. They can be written or coded into rigid slot-and-filler forms, but can also be rewritten more freely to avoid redundant repetition and to add elegant variation, as on the tv. At yet another level a sonnet is a template text insofar as the metre and rhyme schemes can be seen as slots which must be filled with substance. A great deal of everyday conversation consists of template texts; indeed learning to fill slots in pre-set patterns is the essence of good verbal

manners. Therefore we must once again decide how much freedom from slot or template structures we must require of a text to call it 'impromptu'. For instance classroom dialogue, doctor-patient interviews, and openings and closings of telephone conversations are stereotype enough to make them favourite specimens for discourse analysis, precisely because their slot-and-filler structure makes them easier to study. But if they are stereotype, to what extent should they be called impromptu? Where precisely does their impromptuness reside?

Starting out from such scales, we can place texts roughly classifiable as 'impromptu' into different systems of co-ordinates to show their relative degrees of impromptuness. We could for instance conceive of a three-dimensional space whose co-ordinates should be (x) degree of scripting, (y) extent of planning, and (z) degree of macrostructural boundness (slot-and-filler structuring). Scripting varies from fully scripted to wholly unscripted, planning from fully planned to minimally planned, and macrostructural boundness from maximally formulaic to minimally formbound texts. Such variables are not completely independent of each other. Fully scripted texts are ipso facto fully planned, though fully planned texts can be completely unscripted.

Choosing a few dimensions, or scales of co-ordinates, for such classifications and measurements of impromptuness of course also involves decisions as to optimal levels of delicacy. Every speech situation involves countless contextual features, and we must choose those that are relevant to our purpose. All classifications of texts are rough at best, and they are helpful to the extent that they can contribute to the understanding of the typological characteristics of a text. They may not necessarily satisfy stringent epistemological requirements. For instance concepts such as 'planning span' or 'macrostructural boundness' will readily invite discussion and disagreement.

3

Nevertheless we can say that, in terms of our three dimensions, a maximally impromptu utterance is one that is at the same time completely unscripted, maximally unprepared (that is, minimal in planning span), and minimally bound to macrostructural templates. We can then hypothesize that maximally impromptu utterances are likely to differ most from utterances that are fully

scripted, maximally planned, and maximally bound to macrostructural slot-and-filler patterns.

Whatever we think of defining impromptu speech in terms of its linguistic traits, everyday experience as well as the increasing number of reliable transcripts of impromptu texts show that such texts often do have specific linguistic characteristics. When speaking impromptu, people often hesitate, pause, get mixed up in their syntax, repeat themselves, begin sentences in one way but stop and complete them in another, go back and repair, allow their verbal communication to be interwoven with paraverbal and nonverbal actions which affect the text, and refer deictically to objects around them.

When faced with such phenomena, many of which defy traditional syntactic description, a linguist can respond in two fundamentally different ways. He may despair and give up, excusing himself by pointing out that his task, *qua* linguist, is to study language as an idealized code spoken by ideal people in ideal environments. By so doing he will define many of the prominent characteristics of impromptu speech as lying outside his domain. One classic device for the justification of such a restriction is the dichotomy between *langue* and *parole* or between competence and performance. Such dichotomies make it possible to define the linguist's territory as *langue* or competence, and to assign the less tractable phenomena of impromptu speech to *parole* and performance — and to somebody else to worry about!

The opposite policy is to note that such restrictionism, however useful it has proved to be in the history of linguistics, cannot do justice to all aspects of a natural language. One characteristic of a natural language is precisely its tolerance of departures from the strict codes of traditional syntactic description. In actual use, texts obey tendencies and principles rather than absolute rules of the kind that syntacticians traditionally try to formulate. This is why natural-language texts are built on codes with a great deal of redundancy. And to understand the basic nature of the function of redundancy in natural languages we must obviously study texts which make maximal use of redundancies. Such texts characteristically contain structures of the kind syntacticians like to call 'deviant' and which can only be interpreted thanks to redundancies at some level of discourse structure. Among the relevant text types, impromptu speech plays the greatest role in everyday communication. Other text types build more conscious effects on 'deviance', as in modernistic poetry or in such advertisements as make use of word-and-syntax play.

The difference between impromptu discourse and the written standard has often been approached in terms of norm and deviance. Descriptions of written language, in one of its socially dominant styles, have been regarded as the norm, and impromptu speech as an aberration from this norm. The fundamental reason why the written language has been chosen for norm, and speech regarded as an aberration, is to be sought in cultural background: in our civilization grammar has usually been more closely associated with writing than with impromptu speech, and writing is stable enough to favour grammatical description. It is only recently, with the advent first of the portable tape recorder and then of videotape equipment, that we have acquired the technical means for storing reasonably adequate data on real impromptu conversation.

One of the troubles with simple dichotomies between norm and deviance is that natural languages have so many norms. Every style may be seen as a norm of its own, from which the texts within this style may depart within some limits. In this sense, *langue* and 'competence' disintegrate: they do not involve one single monolithic norm but consist of many, and perhaps countless, subnorms and 'subcompetences' describing the subcodes used in each situation and style and register. This multiplicity of norms also exists in spoken language and in impromptu speech. Some styles and registers (and thus subnorms) such as informal conversation between equals allow a great deal of pausing, hesitation, syntactic confusion, repair, and other phenomena often seen as abnormalities or deviant structures. One might then say that these phenomena are sanctioned by the subnorm regulating informal conversation between equals: they are part of the norm rather than instances of deviance. To this approach one might object by saying that, though the major norms of spoken discourse may be different from those of writing (for instance because of the availability of such prosodic and paralinguistic signals as writing cannot accommodate), some features of actual speech should still be regarded as deviant. To take an extreme instance, stuttering is presumably not a feature in the norm, though it might be common in certain types of informal conversation. If this is right, we should learn to define the subnorms of impromptu speech and also decide on precisely what we ought to regard as deviance. Altogether, all discussions of norm and deviance in language require a great deal of care and sophistication. Otherwise we run the risk of indulging in simplistic normalization.

Whatever our views of restrictionism and expansionism, or of norms and deviance, the exact description of impromptu discourse poses a host of special problems. To begin with, traditional methods of syntactic analysis are likely to prove inadequate at once. A first crux is that impromptu speech can be syntactically unstable. In some portions of a text a speaker may follow a well-defined syntactic code, but in other portions of the same text he may produce patterns which conflict with that very code. Such heterogeneity will vex those investigators who expect their data to be consistent. Then, traditional methods of syntactic analysis presuppose that the text can be neatly segmented into sentences and clauses. But impromptu speech is not always amenable to such neat segmentation. There are texts in which one simply cannot find units describable as syntactically well-formed sentences. When faced with such texts the linguist must either relate certain definite text segments to well-formed sentences, or abandon the sentence for some other kind of unit. This will lead him on to some very fundamental decisions. Should he actually try to write a special description — grammar — covering all the structures he finds on the surface of his impromptu texts? In real life this may be difficult because of the instability of the patterns. Or should he rather derive the deviant patterns by special transfer rules out of well-formed sentences? To do so he would have to begin by mapping the deviant structures onto well-formed ones, presumably by producing those well-formed structures that he thinks mean the same as, or are in some other respect equivalent to, the deviant ones. But how can he guarantee that his intuitions are really adequate for such a task? Indeed those who posit a biuniqueness of meaning and linguistic form by insisting that every form has a meaning of its own will at once dismiss such efforts as fundamentally misguided. And they may often be right. In poetry and many kinds of advertisements, for instance, deviance can be very much part of the meaning. Once we substitute well-formed sentences for the deviant ones, the poetry or the advertising ploy may be lost altogether.

Fortunately there seems to be a way out of this dilemma. Though impromptu speech is often syntactically deviant and unstable, it is not unstructured. But some of its structures are not syntactic in nature. They are interactional. Indeed many of the characteristic traits of impromptu speech can be

explained as rising out of a clash between syntactic structures and the requirements of interaction. Whenever interactional considerations override syntactic ones the result is syntactic deviance.

Among interactional principles that may prove stronger than the syntax are those of turn-taking. Many students of pause patterns in speech have been bothered by the observation that pausing sometimes harmonizes with syntactically and collocationally explicable juncturing, but sometimes does not. The inconsistency disappears once we note that when pauses fail to coincide with linguistically predictable junctures, without owing to hesitation, they may have been interfered with by turn-taking patterns. A speaker may thus avoid stopping at a major syntactic juncture, such as the end of a text unit ('paragraph') or sentence, because he wants to avoid the risk of losing his turn. Therefore he may have to stop for breath in a syntactically odd place, such as the middle of a constituent, because here the risk of somebody's usurping the floor is less. Also when an interactional rule posits that long silences must be avoided, a person may feel that avoiding silence is more important than producing syntactically perfect utterances. Phatic necessity may thus prompt utterances that deviate from the syntactic norm. The threshold for the tolerance of silence is a matter of culture. In many countries people from one province are known for their glum silences and those from another province for their garrulity.

Another cause of syntactic deviance is the human cognitive apparatus. People's memories are limited and may be deficient, and other, simultaneous cognitive tasks or factors making normal cognitive processes difficult (such as tiredness or noise) may also interfere with syntax. If we knew enough about cognitive processes we could presumably explain precisely what causes hesitation and different types of lapses from what has been viewed as the syntactic or phonological norm.

Investigators will therefore do wisely in remembering that what seems deviant from the point of view of traditional syntax may be firmly structured from the point of view of interaction or readily explicable in terms of cognitive processing. But if we want to appreciate the interactional structuring of syntactically deviant patterns, and if we want to explain what features in language processing may lead to lapses from syntactical standards, we must venture far beyond the confines of traditional syntax. We must sign the articles of the expansionist's creed and stop taking cover behind concepts such as Saussure's *langue* or Chomsky's competence.

To many students of language, I may seem to be flogging a horse which died some years ago. For the need for a widening of the research territory of linguistics has been thoroughly documented. I should therefore like to summarize the recent expansion of text and discourse linguistics in terms of four major types of text models.

To begin with, students of textual cohesion used to analyse semantic and syntactic links between sentences in already existing texts. They tried to isolate and describe those features that cemented sentences into texts. The next, more ambitious step was to regard a text as a textualization of 'text atoms', that is, underlying simple sentences or predications of some kind. According to this view, texts came into being through the textualization of a set of such text atoms. The textualization was steered by a text strategy, and the same set of text atoms could be turned into a set of different texts by combining and embedding the atoms according to different strategies. Next, however, some scholars wanted to know where text atoms come from. They were no longer happy accepting predications *ex machina* for textualization. They wanted to generate, or extract, their input from out of a cognitive store. Such stores were based on models of cognition that took the form of frames and schemes (as in Minsky 1975 and Abelson and Schank 1977) or associative or cognitive networks (such as those surveyed in Findler 1979). But in operating such cognitive stores, the linguist found himself faced with yet another question, namely, why does a certain individual in a certain situation choose to extract one specific set of text atoms, and not another, out of his store? To explain this we need yet another, fourth type of text model which is capable of reckoning with interactional factors.

In this way we can distinguish four types of text models which I have called sentence-based, predication-based, cognitive, and interactional, respectively. Note that these models relate like Chinese boxes: interactional models may include cognitive models which may include predication-based models which may include sentence-based models. Without explicitly acknowledging that they are moving from one model type to another, many linguists have also tried to bring in features of cognition and interaction into predication-based or sentence-based models by using devices such as semantic fields (formalized as fields or as matrices), performative superstructures (which bring in some selected interactional features such as speaker, receptor and mode), and the focus/presupposition complex (which is interactional

because it involves the speaker's estimate of what knowledge he shares with the receptor). By using such devices, restrictionist syntacticians have in fact proved the need for interactional parameters. They have tacitly acknowledged that we must venture from behind our desks into the world if we are to find the forces that govern interactive behaviour and thereby shape our texts. Impromptu speech gives us a fine window for the study of such forces.

5

Impromptu speech, then, can seem syntactically deviant because it often fails to satisfy the traditional standards of syntactic well-formedness, or grammaticality, as they have been defined for written discourse. Nor need it satisfy high standards of acceptability¹ when presented to groups of judges outside the original impromptu-speech context and situation. Also, as I already noted, impromptu speech can be syntactically unstable in that syntactic rules change, or are relaxed to different degrees, within different portions of the same discourse or utterance.

When syntactic structure proves too unstable to provide us with a firm basis of description, our problem is to find something else to build on. Interactional structures such as those of the speech-act theorists (Searle 1969, Sadock 1974) or students of classroom dialogue (Sinclair and Coulthard 1975) or of turn-taking (e.g. Duncan and Fiske 1977, Schenkein 1978) offer us one such foundation. Another solution would be to look for invariance in the processes of text production and text interpretation. One would then start out by postulating that any text that succeeds in triggering off the desired process of interpretation in a given situation is, communicatively, a success in that situation. Therefore the process must be as important as its trigger structure, if indeed not more so. If this argument is right, we should

¹ I am here using 'grammaticality' to indicate the relation between an utterance and an existing grammatical description of the language (utterance A is grammatical in relation to grammar G if G generates, or otherwise approves of, A), and 'acceptability' to indicate what a group of suitably selected judges say about, or can do to, an uncontextualized utterance or structure. 'Appropriateness' would be the term for what judges say about the situational and contextual decorum of an utterance or utterance feature. 'Appropriateness' thus turns into contextual acceptability.

look into our chances of setting up a process linguistics, a linguistics which tries to analyse and describe processes and not only the structures that trigger them off.

In this light it is hardly surprising that a very large number of recent publications, books and articles in linguistics carry the word *process* or *processing* in their title. Such a markedly processual stance has been prompted by two different motives. First, processes provide us with a stable and invariant base when we have to describe texts with unstable syntactic structures. Secondly, many students of language are directly interested in language processing, either studying it for its own sake as pure scientists (like psychologists and physiologists) or because they want to learn to imitate it and to apply it to practical problems (like students of artificial intelligence and of rhetoric and translation). There seems to be no reason why these categories of investigators could not join forces when assaying their common problems. The student of impromptu speech too stands to gain from a knowledge of the results gained in processual psycholinguistics and in artificial intelligence.

Such a process linguistics² will of course not be hostile to structural description. On the contrary, a process by definition involves a change of one structure into another, and to describe processes we must therefore be able to describe structures. Thus even those whose interest is in processes will have to set up structures: witness for instance the frames and schemes of students of artificial intelligence. To study *energeia*, to speak with Humboldt, we should not throw out the *ergon* with the bathwater. The distinction between a structuralist and a processualist does therefore not lie in a mutual disdain of one's colleague's tools. The difference is rather one of emphasis. A processualist wants to use structures to explicate processes. And a structuralist must often make use of processes to explicate structures. We should recall that the most basic structural units such as phonemes and morphemes were in fact defined processually even by the most convinced structuralists. They gave us explicit operational instructions for the segmentation of the speech stream, and what came out of this segmentation process was a set of pho-

² The term 'procedural linguistics' is also in use. I prefer 'process linguistics' because all linguists, whether processualists or not, of course make use of procedures of some kind in their work. 'Processual' is less opaque than 'procedural' because it directly reveals the emphasis on process.

nemes or of morphemes. Thus the structuralists made excellent operational use of processes. In generative-transformational grammar the processes became even more conspicuous and explicit. Every phrase-structure rule and every transformation in effect describes a process through which one structure changes into another. Instructions for the format and writing of generative rules can be regarded as instructions for process description.

There is, however, one major difference between the processualist and the structuralist. The structuralist's task was to describe structures. When he needed processes he could tailor them freely and *ad hoc* to fit his descriptive purposes. His segmentation processes or phrase-structure rules and transformations (and here the transformationalists should still count as structuralists because their units are defined in relation to each other and as parts of structures) were not patterned on processes known to us from outside linguistic analysis. On the contrary, the processualist likes to pattern his processes on models he has found outside the description of language. He looks for models for them in the empirical studies of psychologists, neuropsychologists and psycholinguists. His models may involve considerations of economy known to us from information theory, for instance in terms of entropy. They may evoke principles we are familiar with from rhetoric as teleological tenets of effective communication, or from literary studies or narratology as principles of textual macrostructure. And they may be based on computer operations. Patterning linguistic processes on computer analogies is indeed a basic requirement for operations in artificial intelligence, which tries to imitate intelligent human behaviour, including the analysis and production of texts, by machine.

6

Though there need be no inherent antagonism between structural linguistics and process linguistics, the latter can still profit from a conceptual frame of its own. Indeed we can hardly speak about a proper process linguistics unless it has a set of concepts peculiar to itself.

There has been a great deal of discussion over the years about analogies between natural languages and semiotic systems such as money. Many scholars also keep coming back to analogies between sciences such as chemistry or mathematics or physics, and linguistics (so for instance Zwicky 1980). Linguistic units obviously combine in ways to some extent analogical to those

in which atoms and molecules form larger units, and ways of looking at language have been compared to the particle, wave, and field models of physics. Entropy is another concept useful to linguists. It is thus worth while to look around for theories and models developed in other fields and see whether they are applicable to the study of natural languages. For the student of processes it is natural to see whether the Decision Theory developed by students of economics and business administration might be of use (see e.g. Bross 1966, Kaufmann 1968, Lindström 1971, and Raiffa 1968). Decision theory is relevant to students of processes because processes are made up of decisions, and can therefore be described in terms of decisions and chains of decisions. In the following I shall rehearse and define a few basic concepts related to decisions that I think will be of potential use to process linguists.

Processes consist of actions. Whenever there are alternative actions, the process is determined by a choice involving a decision. Every point at which a decision has to be made can be called a decision point. We recognize that we have arrived at a decision point by the presence of a set of decision criteria: when we observe the presence of a certain combination of such criteria we realize that the time has come when we must make a decision.

All students of volitional human behaviour must assume that such behavior is goal-directed. This means that the causalities underlying our actions ought to be described teleologically. To reach a certain goal we must have a strategy. When a strategy is applied to a concrete situation it becomes a plan. Strategies, and their concretizations into plans, recommend decisions (and thus actions) in terms of sets of weighted decision criteria. At each decision point we make an inventory of the decision criteria that are present, we weight them positively or negatively according to the specifications given in the goal-oriented strategy, and we then make our decision accordingly. Depending on the degree of certainty of the weighting we can speak of different types of decisions. A decision is determinate if we can weight the decision criteria exactly and thus fully predict the consequences of each alternative action. A decision is statistical if, thanks to projections of past experience, we can foresee the consequences of the possible actions with only a certain degree of probability. This degree of probability will determine the trustworthiness of our weighting of decision criteria. Finally, a decision can be labelled as stochastic if we are unable to predict its consequences. When making stochastic decisions we are compelled to act randomly and blindly because we cannot relate the decision to past experience.

Strategies too arise through processes involving decisions. There are thus strategy-forming processes as well as strategy-executing processes. In actual fact strategies form an extremely complex hierarchy of superstrategies, strategies, substrategies, sub-substrategies, and so on. Such hierarchies may vary with the situation. And a naive speaker may be as unable to describe them as he is of describing the syntactic structures he is using.

In many instances we can check on the correctness of a decision. In addition to decision points we can thus speak of confirmation points, meaning points where we find out whether a decision was right or wrong. The relation between a decision point and a confirmation point in syntactic and semantic analysis can be neatly illustrated in so-called garden path sentences such as *The canoe floated down the river sank*. Past experience suggests that *the canoe* is an active subject and *floated* its active verb, because such a structure would be statistically most likely. The collocation *the canoe floated* also supports such an analysis. It is only when we come to *river sank* and note that *river-sank* cannot be a compound substantive that we note that *sank* must be the active verb. We then have to go back and re-analyze to find the correct structure: *The canoe (which was) floated down the river sank*. In this type of garden-path sentence, the confirmation point lies within the sentence. In other types of ambiguous sentences, the confirmation point may lie in the text or in the situation. Thus to see whether *Have the boys cut the grass* is a question or an imperative we must either have access to the intonation, or rely on the textual and situational context. Note that an unambiguous structure can be defined as one where decision point and confirmation point coincide. Therefore if we want to compose texts with minimum opportunities for misinterpretation and minimum needs for cumbersome backtracking we ought to make the confirmation points coincide with decision points. Texts where confirmation points follow closely upon their decision points are less taxing for the receptor than texts where distances between the two are great. It would be a worthwhile task also to make an inventory of the devices languages use to insert special confirmation signals into syntactic structures. I take it this is the function of the otherwise meaningless Finnish *niin* in structures such as *Jos sinä tulet niin minä lähden*. The task of *niin* is to confirm the place of a boundary, here between clauses, so that the receptor need not try to fit the first item of the latter clause into the former clause. *Niin* could be called an early-closure marker: it prevents us from letting constituents run on.

Whatever concepts and frames we may find expedient, a processual frame of thought should be useful to the linguist in two ways. First it reminds him of the teleological aspects of communication, of the importance of goals and purposes which may motivate departures from ordinary syntactic well-formedness. Turn-taking strategies may cut across and override syntactic patterns, and cognitive processes may interfere with syntax. Feedback from the receptor enables us to monitor and, if need be, revise our strategies. Sometimes we need not pursue a sentence to the end because the receptor has understood us already. And sometimes we may have to repeat, to clarify and to expand our text, to reduce the tempo and increase the loudness, because otherwise the message does not go across. Syntax is merely the handmaiden and exponent of strategy-controlled communicative processes. And syntactic structures do not exist for their own sake. They are subordinate to communicative strategies and processes. If we want to understand why a sentence looks the way it does, we must refer it to the strategy which controls the interaction and the text.

Secondly, thinking of language not only as structure but also as process will set a premium on those descriptive models that illustrate processes, or at least give us tools for so doing. This applies both to models that produce discourse and to models that analyse discourse. What the process linguist is looking for is 'performance models', in both the everyday and the technical sense of 'performance'. To begin with we should test the processual adequacy of available grammar models. Transformational grammars are capable of modelling the genesis of well-formed sentences as processes. But they bring in discursal features only in the form of a few parameters of sentence generation such as performative superstructures, some distinctions between old and new information, and the like. Thus they are seriously embarrassed by syntactically deviant, though interactionally acceptable, structures. Systemic grammars of the Halliday type give network presentations of a wider range of strategic and interactional choices. The most explicitly processual approach exists in grammars set up for automatic parsing such as Augmented Transition Network grammars (ATN grammars: see Kaplan 1972 and 1975), or those of Marcus (Marcus 1980) or Welin (Welin 1980) or Sager (Sager 1981). How to handle the indeterminacies characteristic of natural languages and human communication with the aid of deterministic machine algorithms is always a major crux in automatic parsing, nor is it easy to see

how an automatic parser could learn to imitate a human being's ability of extracting contextual sense out of syntactically ill-formed utterances. The point is of course that syntactic parsing is just one of the many processes that interact to produce text interpretation. Parsing must be supplemented by other processes such as referring sentences to semantic frames or schemes (Minsky 1975, Abelson and Schank 1977). But frames and schemes have their problems too. One of them is infinite regress: the concepts that enter into one scheme need explication in terms of other schemata, and so on perhaps ad infinitum. Thus machines will probably only manage problems which can be simplified to avoid such infinite regress. To handle the full complexity of communicative processes in the full complexity of their physiological, psychological and sociophysical setting we shall always need men and women of flesh and blood.

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